



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,639	03/30/2004	Satoshi Ajiki	CU-3673 RJS	5276
26530	7590	11/28/2007		
LADAS & PARRY LLP 224 SOUTH MICHIGAN AVENUE SUITE 1600 CHICAGO, IL 60604			EXAMINER CUTLER, ALBERT H	
			ART UNIT 2622	PAPER NUMBER
			MAIL DATE 11/28/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/812,639

Applicant(s)

AJIKI ET AL.

Examiner

Albert H. Cutler

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>08/10/2007, 10/12/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is responsive to communication filed on October 1, 2007.

Claims 1-8 are pending in the application.

Response to Arguments

2. Applicant's arguments filed October 1, 2007 have been fully considered but they are not persuasive.

3. Applicant argues that in Segawa et al., the flexible board 8 pushes the spring electrodes 15 perpendicularly. However, in the present invention as shown in FIG. 7B, when the parts are set in their positions, the springy portion 22b of the contacting member 22 does not have contact with the compact camera module, and the contacting end 22c of the contacting member 22 pushes the electrode pad 42b on the compact camera module in a horizontal direction toward an inner side of the compact camera module (the force F1 in 7B). The claims have been amended to better define these differences. Also, as it relates to Claims 2, 3, 6 and 7, the hook portion 27C of the grounding contact member 27 imposes a horizontal force F2 on the compact camera module.

4. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., that the contacting end 22c of the contacting member 22 pushes the electrode pad 42b on the compact camera module **in a horizontal direction**, and the **hook portion 27C** of the grounding contact member 27 **imposes a horizontal force F2** on the compact camera module) are not recited in the rejected claim(s). Although the claims

are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

5. The Examiner respectfully disagrees that the amended claims better define the limitations shown in figure 7B, and as stated above by Applicant. Rather the newly amended claims simply recite that the depressed portion accommodates the springy portion, and that the contacting end pushes the electrode pad to an inner side of the compact camera module. Both of these features are found in Segawa et al. For instance, the depressed portion as originally defined by the Examiner is the "lower portion between the image sensor(7) and the lens holder(13)", figures 4 and 5. This portion, for example, is the area where numeral 16 in figure 4 makes reference to as a "pint". From figure 2, one can clearly see that the springy portion(15) is accommodated in the depressed portion, and in fact, the entire connector(12) is accommodated in the depressed portion. As per the second newly recited feature, the contacting end of the spring electrode(15) pushes the electrode pad(8) to an inner side of the compact camera module(paragraphs 0034-0039). Segawa et al. state that, "the terminal 8b is thereby firmly connected to the electrodes 15", paragraph 0036. The spring electrodes(15) are "**pressed** into contact with the external connection terminal 8b", paragraph 0034. As 8b is on an inner side of the contact camera module, Segawa et al. satisfy the limitation that the contacting end pushes the electrode pad to an inner side of the compact camera module.

6. Therefore, the Examiner is maintaining the rejection.

Claim Rejections - 35 USC § 102

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 1, 2, 4, 5, 6, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Segawa et al. (US 2002/0057468).

9. The response to Applicant's arguments, as outlined above, is hereby incorporated into the rejection of claims 1, 2, 4, 5, 6 and 8 by reference.

Consider claim 1, Segawa et al. teach:

A mounting structure (figure 2) for installing a compact camera module ("photoelectric conversion module", 6) into a socket, said compact camera module including a lens and a solid image pickup device (See figure 4 for explanatory purposes. The top part of figure 4 is the camera module (6) including a lens (5) and an image sensor (7). The module is mounted into a socket (i.e. the bottom part of figure 4), comprising a connector (12) and a board (1).), the mounting structure (see figure 2) comprising:

an electrode pad ("flexible board", 8) formed in a lower portion of the compact camera module;

a contacting member(15) having a contacting end and a springy portion(The contacting member is a "spring electrode", paragraph 0034. Therefore, the contacting end and the springy portion are one in the same, as the contacting end is part of a springy portion.) disposed in the socket(See figure 2, paragraph 0034. Spring electrodes(15) are connected to connectors(12) in the socket.); and

a depressed portion formed on the lower portion of the compact camera module(See figures 2 and 4. The camera module contains a depressed portion on the lower portion between the image sensor(7) and the lens holder(13). This depressed portion is where the connector(12, figure 2) is fitted.);

wherein, when the lower portion of the compact camera module is inserted into the socket, the depressed portion accommodates the springy portion of the contacting member(15) so that the lower portion of the compact camera module(6) does not make contact with the springy portion of the contacting member(15)(The lower portion(7), comprising the image sensor, of the camera module(6) is inserted into the socket(see figures 2 and 4). This portion does not make contact with the springy portion(15) of the contacting member when the camera module(6) is inserted into the socket(see figure 2). The depressed portion as originally defined by the Examiner is the "lower portion between the image sensor(7) and the lens holder(13)", figures 4 and 5. This portion, for example, is the area where numeral 16 in figure 4 makes reference to as a "pint". From figure 2, one can clearly see that the springy portion(15) is accommodated in the depressed portion, and in fact, the entire connector(12) is accommodated in the depressed portion.),

and the contacting end pushes the electrode pad to an inner side of the compact camera module(See paragraphs 0034-0039. Segawa et al. state that, "the terminal 8b is thereby firmly connected to the electrodes 15", paragraph 0036. The spring electrodes(15) are "**pressed** into contact with the external connection terminal 8b", paragraph 0034. As 8b is on an inner side of the contact camera module, Segawa et al. satisfy the limitation that the contacting end pushes the electrode pad to an inner side of the compact camera module.).

Consider claim 2, Segawa et al. teach:

A mounting structure(figure 2) for installing a compact camera module("photoelectric conversion module", 6) into a socket, said compact camera module including a lens and a solid image pickup device(See figure 4 for explanatory purposes. The top part of figure 4 is the camera module(6) including a lens(5) and an image sensor(7). The module is mounted into a socket(i.e. the bottom part of figure 4), comprising a connector(12) and a board(1).), the mounting structure(see figure 2) comprising:

an electrode pad("flexible board", 8) formed in a lower portion of the compact camera module(6);

a contacting member(15) having a contacting end(The contacting member is a "spring electrode"; paragraph 0034.) disposed in the socket(See figure 2, paragraph 0034. Spring electrodes(15) are connected to connectors(12) in the socket.), the

contacting end(15) pushing the electrode pad to an inner side of the compact camera module when the lower portion of the compact camera module is inserted into the socket(See paragraphs 0034-0039. Segawa et al. state that, "the terminal 8b is thereby firmly connected to the electrodes 15", paragraph 0036. The spring electrodes(15) are "**pressed** into contact with the external connection terminal 8b", paragraph 0034. As 8b is on an inner side of the contact camera module, Segawa et al. satisfy the limitation that the contacting end pushes the electrode pad to an inner side of the compact camera module.); and

an engagement member(15) disposed in the socket to lock the compact camera module(6) when the lower portion of the compact camera module is inserted into the socket so that the compact camera module(6) does not separate from the socket(Pressure between the spring electrode(15) and the electrode pad(8b) holds(i.e. locks) the camera module(6) in the socket. See paragraphs 0034-0039.).

Consider claim 4, Segawa et al. teach:

A mounting structure(figure 2) for installing a compact camera module("photoelectric conversion module", 6) into a socket said compact camera module including a lens and a solid image pickup device(See figure 4 for explanatory purposes. The top part of figure 4 is the camera module(6) including a lens(5) and an image sensor(7). The module is mounted into a socket(i.e. the bottom part of figure 4), comprising a connector(12) and a board(1).), the mounting structure(see figure 2) comprising:

an electrode pad("flexible board", 8) formed in a lower portion of the compact camera module(6);

a contacting member(15) having a contacting end(The contacting member is a "spring electrode", paragraph 0034.) disposed in the socket(See figure 2, paragraph 0034. Spring electrodes(15) are connected to connectors(12) in the socket.), the contacting end(15) pushing the electrode pad to an inner side of the compact camera module when the lower portion of the compact camera module is inserted into the socket(See paragraphs 0034-0039. Segawa et al. state that, "the terminal 8b is thereby firmly connected to the electrodes 15", paragraph 0036. The spring electrodes(15) are "**pressed** into contact with the external connection terminal 8b", paragraph 0034. As 8b is on an inner side of the contact camera module, Segawa et al. satisfy the limitation that the contacting end pushes the electrode pad to an inner side of the compact camera module.);

a recess formed on the lower portion of the compact camera module(See figures 2 and 4. The camera module contains a recessed portion on the lower portion between the image sensor(7) and the lens holder(13). This depressed portion is where the connector(12, figure 2) is fitted.); and

a cutout formed on the socket at a position in correspondence to the recess, the recess facing the cutout when the lower portion of the compact camera module is inserted into the socket(See figures 2 and 4. The connector(12) of the socket contains a cutout portion on the outside edge thereof, which cutout portion faces the recessed portion of the camera module, and accommodates the flexible board(8).),

wherein the recess is engagable with a de-installation tool through the cutout when the lower portion of the compact camera module is inserted into the socket(The recess and cutout are engagable with the spring electrode(15, i.e. a deinstallation tool), which connects the recessed portion and cutout portion when the camera module is inserted into the socket, paragraphs 0034-0039.).

Consider claim 5, Segawa et al. teach:

A compact camera module set(figure 2), comprising:

a compact camera module(6) including a lens(5) and a solid image pickup device(7); and

a socket(See figure 4 for explanatory purposes. The top part of figure 4 is the camera module(6) including a lens(5) and an image sensor(7). The module is mounted into a socket(i.e. the bottom part of figure 4), comprising a connector(12) and a board(1).),

wherein an electrode pad("flexible board", 8) is formed in a lower portion of the compact camera module(6);

a contacting member(15) having a contacting end and a springy portion(The contacting member is a "spring electrode", paragraph 0034. Therefore, the contacting end and the springy portion are one in the same, as the contacting end is part of a springy portion.) disposed in the socket(See figure 2, paragraph 0034. Spring electrodes(15) are connected to connectors(12) in the socket.); and

a depressed portion formed on the lower portion of the compact camera module(See figures 2 and 4. The camera module contains a depressed portion on the lower portion between the image sensor(7) and the lens holder(13). This depressed portion is where the connector(12, figure 2) is fitted.);

wherein, when the lower portion of the compact camera module is inserted into the socket, the depressed portion accommodates the springy portion of the contacting member(15) so that the lower portion of the compact camera module(6) does not make contact with the springy portion of the contacting member(15)(The lower portion(7), comprising the image sensor, of the camera module(6) is inserted into the socket(see figures 2 and 4). This portion does not make contact with the springy portion(15) of the contacting member when the camera module(6) is inserted into the socket(see figure 2). The depressed portion as originally defined by the Examiner is the "lower portion between the image sensor(7) and the lens holder(13)", figures 4 and 5. This portion, for example, is the area where numeral 16 in figure 4 makes reference to as a "pint". From figure 2, one can clearly see that the springy portion(15) is accommodated in the depressed portion, and in fact, the entire connector(12) is accommodated in the depressed portion.),

and the contacting end pushes the electrode pad to an inner side of the compact camera module(See paragraphs 0034-0039. Segawa et al. state that, "the terminal 8b is thereby firmly connected to the electrodes 15", paragraph 0036. The spring electrodes(15) are "**pressed** into contact with the external connection terminal 8b", paragraph 0034. As 8b is on an inner side of the contact camera module, Segawa et al.

satisfy the limitation that the contacting end pushes the electrode pad to an inner side of the compact camera module.).

Consider claim 6, Segawa et al. teach:

A compact camera module set(figure 2), comprising:

a compact camera module(6) including a lens(5) and a solid image pickup device(7); and

a socket(See figure 4 for explanatory purposes. The top part of figure 4 is the camera module(6) including a lens(5) and an image sensor(7). The module is mounted into a socket(i.e. the bottom part of figure 4), comprising a connector(12) and a board(1).), wherein

an electrode pad("flexible board", 8) is formed in a lower portion of the compact camera module(6);

a contacting member(15) having a contacting end(The contacting member is a "spring electrode", paragraph 0034.) disposed in the socket(See figure 2, paragraph 0034. Spring electrodes(15) are connected to connectors(12) in the socket.), the contacting end(15) pushing the electrode pad to an inner side of the compact camera module when the lower portion of the compact camera module is inserted into the socket(See paragraphs 0034-0039. Segawa et al. state that, "the terminal 8b is thereby firmly connected to the electrodes 15", paragraph 0036. The spring electrodes(15) are "**pressed** into contact with the external connection terminal 8b", paragraph 0034. As 8b is on an inner side of the contact camera module, Segawa et al. satisfy the limitation

that the contacting end pushes the electrode pad to an inner side of the compact camera module.); and

an engagement member(15) disposed in the socket to lock the compact camera module(6) when the lower portion of the compact camera module is inserted into the socket so that the compact camera module(6) does not separate from the socket(Pressure between the spring electrode(15) and the electrode pad(8b) holds(i.e. locks) the camera module(6) in the socket. See paragraphs 0034-0039.)

Consider claim 8, Segawa et al. teach:

A compact camera module set(figure 2), comprising:

a compact camera module(6) including a lens(5) and a solid image pickup device(7); and

a socket(See figure 4 for explanatory purposes. The top part of figure 4 is the camera module(6) including a lens(5) and an image sensor(7). The module is mounted into a socket(i.e. the bottom part of figure 4), comprising a connector(12) and a board(1).),

wherein an electrode pad("flexible board", 8) is formed in a lower portion of the compact camera module(6);

a contacting member(15) having a contacting end(The contacting member is a "spring electrode", paragraph 0034.) disposed in the socket(See figure 2, paragraph 0034. Spring electrodes(15) are connected to connectors(12) in the socket.), the contacting end(15) pushing the electrode pad to an inner side of the compact camera

module when the lower portion of the compact camera module is inserted into the socket(See paragraphs 0034-0039. Segawa et al. state that, "the terminal 8b is thereby firmly connected to the electrodes 15", paragraph 0036. The spring electrodes(15) are "**pressed** into contact with the external connection terminal 8b", paragraph 0034. As 8b is on an inner side of the contact camera module, Segawa et al. satisfy the limitation that the contacting end pushes the electrode pad to an inner side of the compact camera module.); and

a recess formed on the lower portion of the compact camera module(See figures 2 and 4. The camera module contains a recessed portion on the lower portion between the image sensor(7) and the lens holder(13). This depressed portion is where the connector(12, figure 2) is fitted.); and

a cutout formed on the socket at a position in correspondence to the recess, the recess facing the cutout when the lower portion of the compact camera module is inserted into the socket(See figures 2 and 4. The connector(12) of the socket contains a cutout portion on the outside edge thereof, which cutout portion faces the recessed portion of the camera module, and accommodates the flexible board(8).), the recess being engagable with a de-installation tool through the cutout when the lower portion of the compact camera module is inserted into the socket(The recess and cutout are engagable with the spring electrode(15, i.e. a deinstallation tool), which connects the recessed portion and cutout portion when the camera module is inserted into the socket, paragraphs 0034-0039.).

Claim Rejections - 35 USC § 103

10. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

11. Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Segawa et al. in view of Akimoto et al.(US 2002/0191103).

Consider claim 3, and as applied to claim 2 above, Segawa et al. teach of a socket and an engagement member. However Segawa et al. do not explicitly teach that the socket comprises a grounding contact member, or that the engagement member is a portion of the grounding contacting member.

Akimoto et al. is similar to Segawa et al. in that Akimoto et al. also teach of a camera module connected to a socket(see figure 2, paragraphs 0023-0027). Akimoto et al. also similarly teach of electrodes connected to the camera module(11, figures 1-3, paragraphs 0019, 0028, and 0029).

However, in addition to the teachings of Segawa et al., Akimoto et al. teach that one of the electrodes(11a, figures 3 and 4) is a grounding contact member(paragraphs 0028 and 0029).

The spring electrodes taught by Segawa et al. are engagement members(see claim 2 rationale). Therefore, if one of the spring electrodes of Segawa et al. is a ground electrode as taught by Akimoto et al., then the engagement member is a portion of the ground contacting member.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include a grounding contact member as taught by Akimoto et al., as one of the spring electrodes taught by Segawa et al. for the benefit of preventing charge buildup and providing assistance in the alignment of the camera module by indicating a correct orientation to a user(Akimoto et al., paragraphs 0028 and 0029).

Consider claim 7, and as applied to claim 6 above, Segawa et al. teach of a socket and an engagement member. However Segawa et al. do not explicitly teach that the socket comprises a grounding contact member, or that the engagement member is a portion of the grounding contacting member.

Akimoto et al. is similar to Segawa et al. in that Akimoto et al. also teach of a camera module connected to a socket(see figure 2, paragraphs 0023-0027). Akimoto et al. also similarly teach of electrodes connected to the camera module(11, figures 1-3, paragraphs 0019, 0028, and 0029).

However, in addition to the teachings of Segawa et al., Akimoto et al. teach that one of the electrodes(11a, figures 3 and 4) is a grounding contact member(paragraphs 0028 and 0029).

The spring electrodes taught by Segawa et al. are engagement members(see claim 6 rationale). Therefore, if one of the spring electrodes of Segawa et al. is a ground electrode as taught by Akimoto et al., then the engagement member is a portion of the ground contacting member.

Therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention to include a grounding contact member as taught by Akimoto et al., as one of the spring electrodes taught by Segawa et al. for the benefit of preventing charge buildup and providing assistance in the alignment of the camera module by indicating a correct orientation to a user(Akimoto et al., paragraphs 0028 and 0029).

Conclusion

12. Any objections made by the Examiner to the drawings and claims are hereby removed in view of Applicant's response.

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

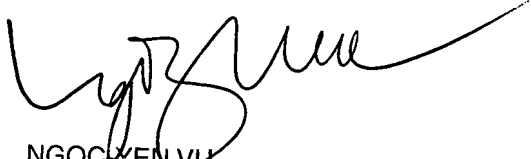
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Albert H. Cutler whose telephone number is (571)-270-1460. The examiner can normally be reached on Mon-Fri (7:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ngoc-Yen Vu can be reached on (571)-272-7320. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AC


NGOCYEN VU
SUPERVISORY PATENT EXAMINER